

Human-Animal Relationships in a Global Context: Implications for Emerging Disease

David Waltner-Toews

Veterinarians without Borders/ Vétérinaires sans Frontières

Network for Ecosystem Sustainability and Health

Population Medicine, University of Guelph



Veterinarians without borders
Vétérinaires sans frontières
————— **Canada** —————

If disease is an expression of individual life under unfavorable conditions, then epidemics must be indicators of mass disturbance in mass life.

Rudolf L.K. Virchow

Farmer, Butcher, Animal Rights Activist



What we do with animals: The Simple Version

- We watch them - entertainment
- We play with them - pets
- We work with them
- We eat them



Animals as Entertainment: racing, fighting... circuses...



We play with them





They play with each other

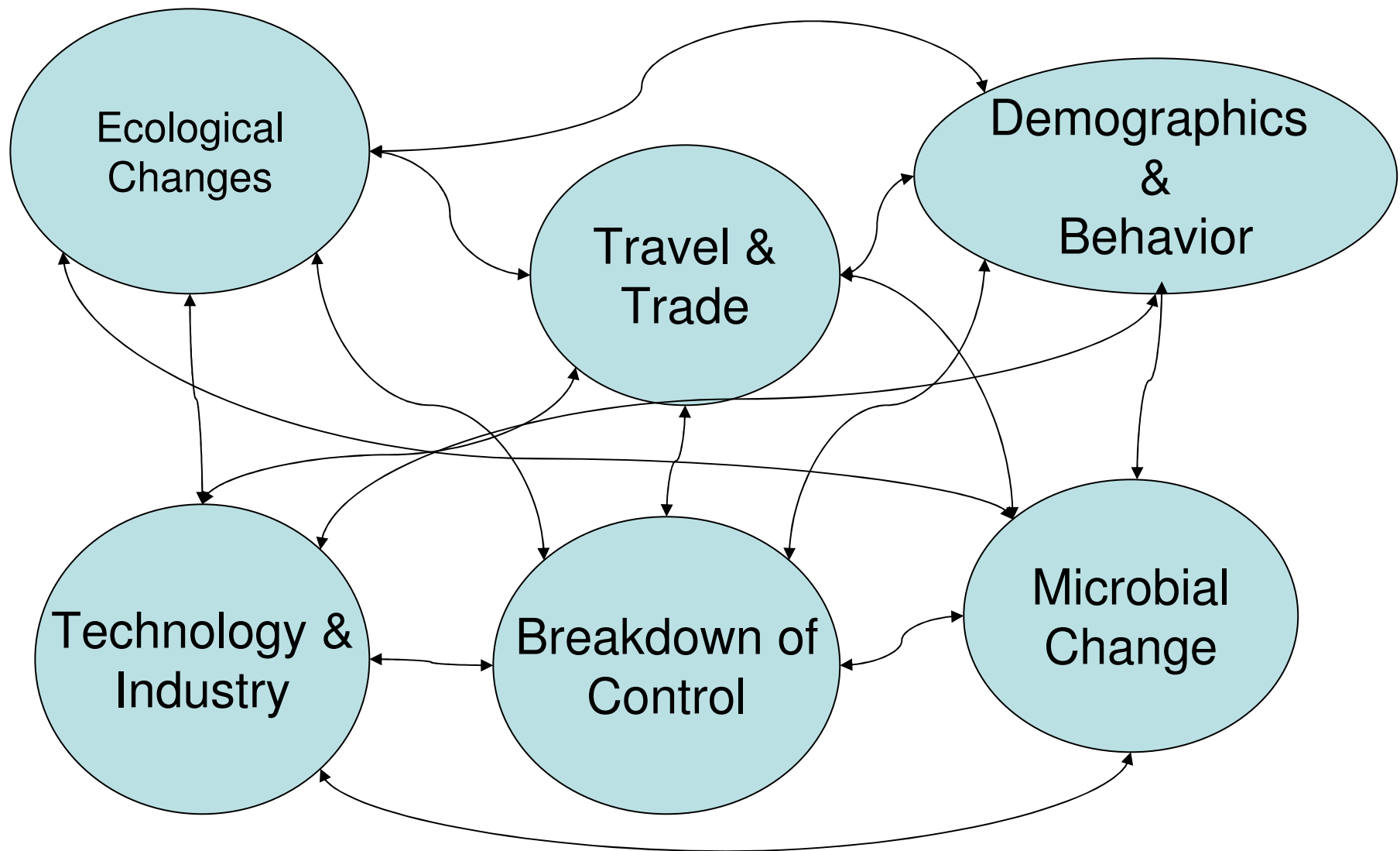
They work with us/ for us



We Eat Them



Why do we care how other people relate to animals?



How “We” Relate to Animals: The Complex Version

Animals as Key Players in Ecosystem
Health (Millennium Ecosystem
Assessment) and Alleviation of Poverty
(Millennium Development Goals)

The Problem



Noon behind a restaurant
in Cambodia



Morning outside the
bar at Pucallpa, Peru

The Solution?





The problem with some solutions?



The Problem – Hydatid Disease - Nepal

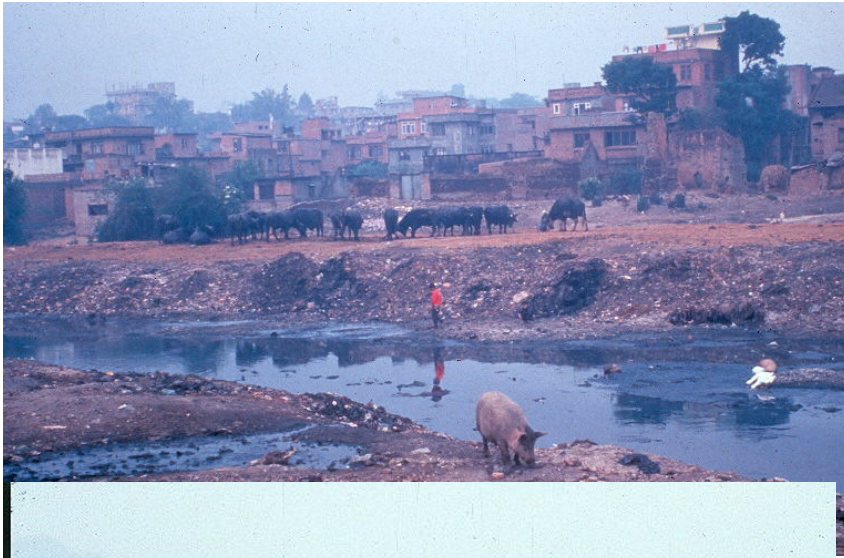


WHO says kill street dogs to control rabies & hydatid

Kill WHO?



Ecosystem Health: A Less Lethal Solution





Indonesia



Cambodia



Honduras



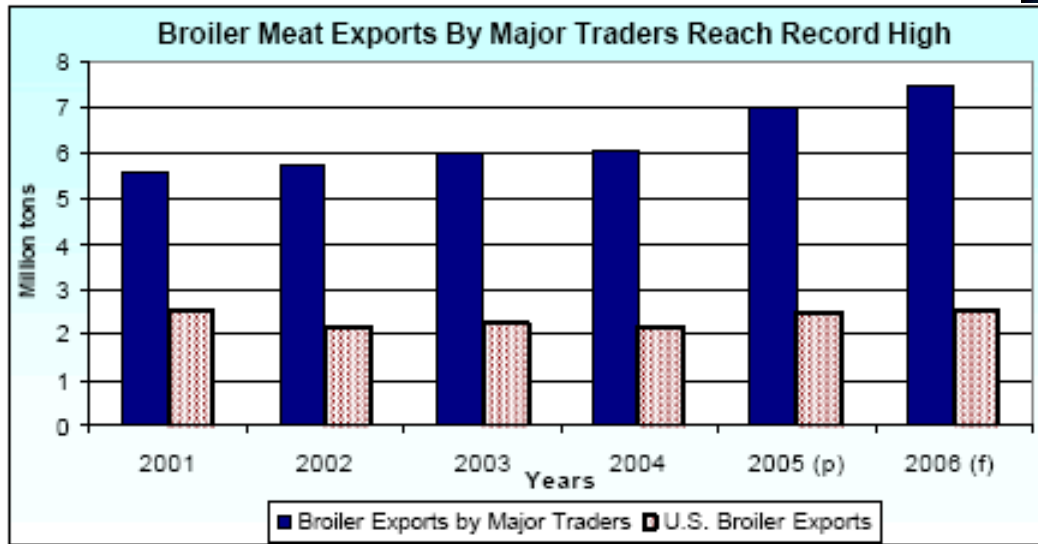
Tanzania



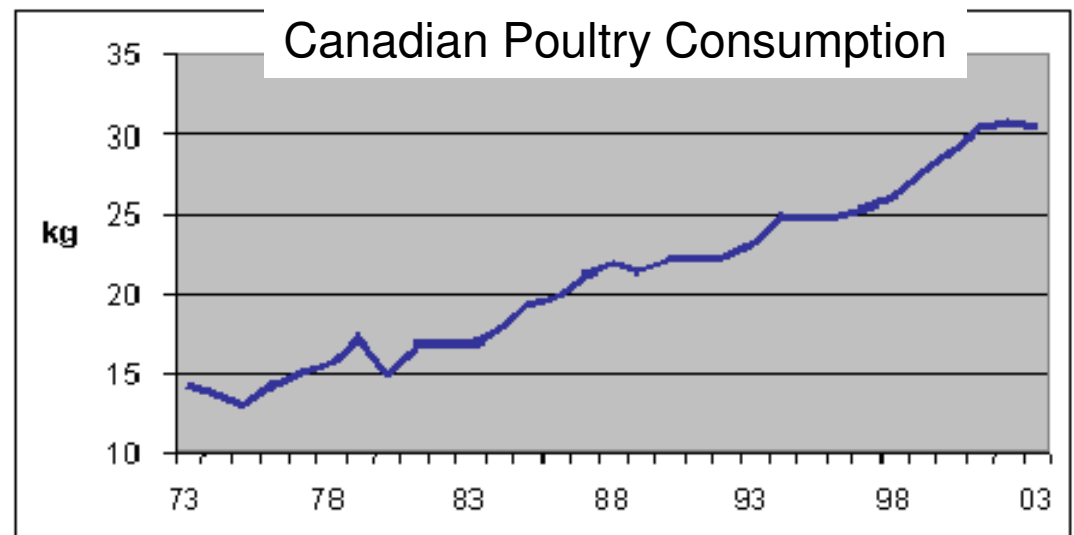
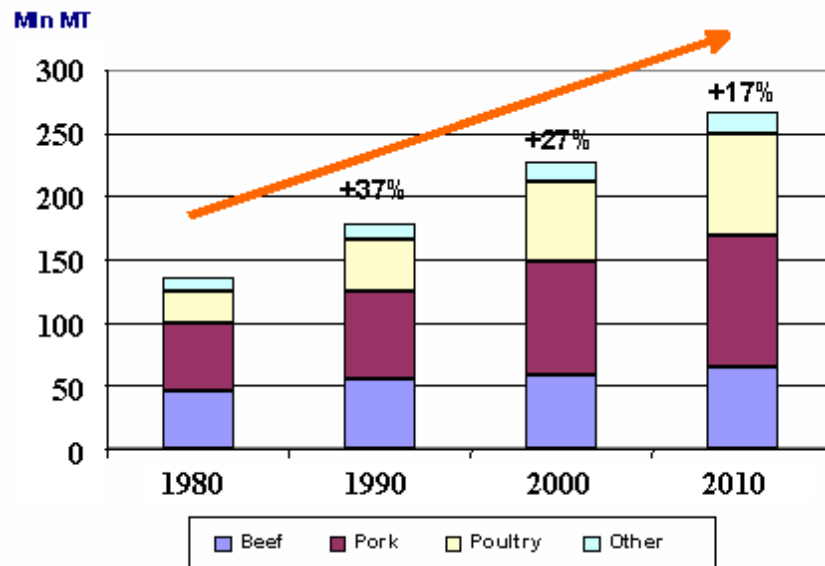
Getting Birds to Market -Low Ecological Impact but?



1996 – the Global & Asian Economies Boomed



Source: Production, Supply and Distribution Database, FAS





Intensification,
economies of scale,
guarding the basket -
Is this a solution?





What happens if you scale up extensive systems?



2006 – The free running birds were living inside and...





The chickens were trying to get inside.
Why?



What happens if you simply “scale up” in a complex system:
Systemic, cross scale feedbacks.

The Challenges - Complexity is the “new paradigm”

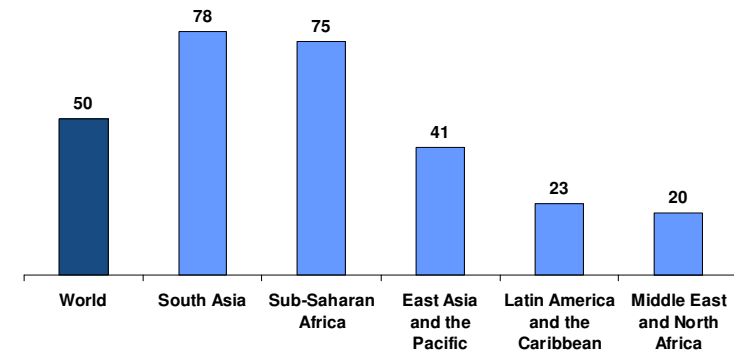
- Disparity and Rapid change - thresholds and tipping points
- Hidden Connections (Blinders on): What we think we see is not always what is “there”
- Multiple connections in a nested hierarchy, feedback loops, complexity
- Multiple perspectives – whose truth counts?
Animals are simultaneously members of public health, economic, ecological and agricultural systems.

Global Issues: Wealth Disparity

- **1960:** The poorest 20% of the world's population only had a share of 2.3% of the global income. The top 20% of the world's population earned 70.2% of the global income.
- **1998:** The poorest 20% of the world's population only had a share of 1.2% of the global income. The top 20% of the world's population earned 89% of the global income.
- 50% of the world's countries do 90% of the trade and use 90% of its energy sources
- Is there a critical point?

Population Living on Less Than US\$2 per Day

2002
Percent



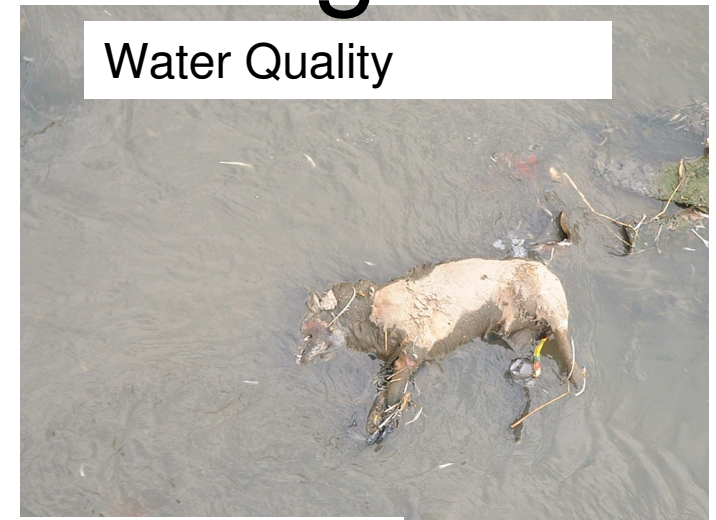
Source: World Bank, *World Development Indicators 2006*.
© 2006 Population Reference Bureau



Communications & Drugs

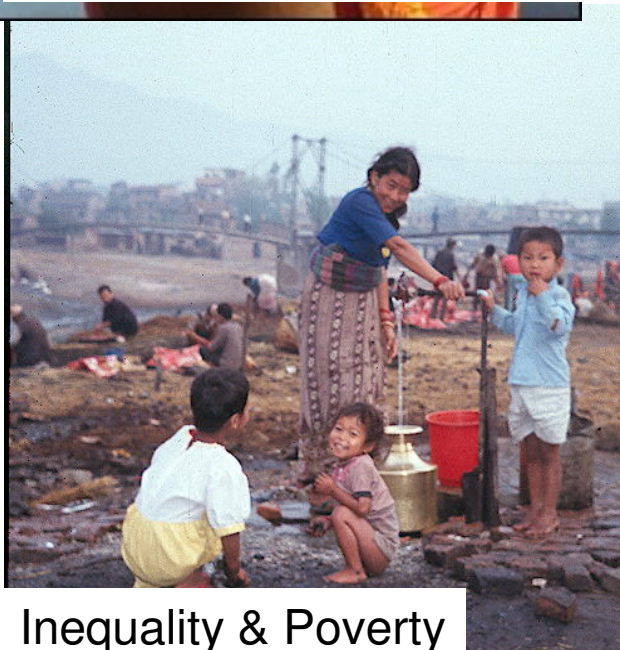
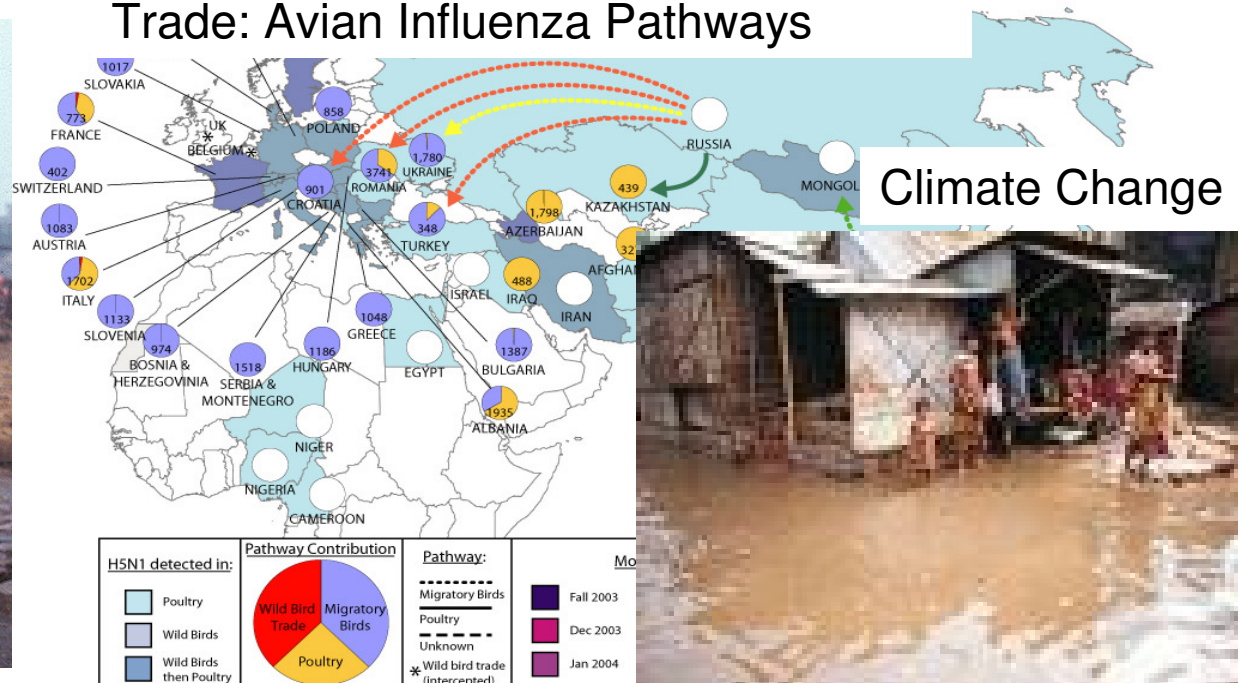
The Global Village

The rich are richer, the poor, poorer & we are all in glass houses



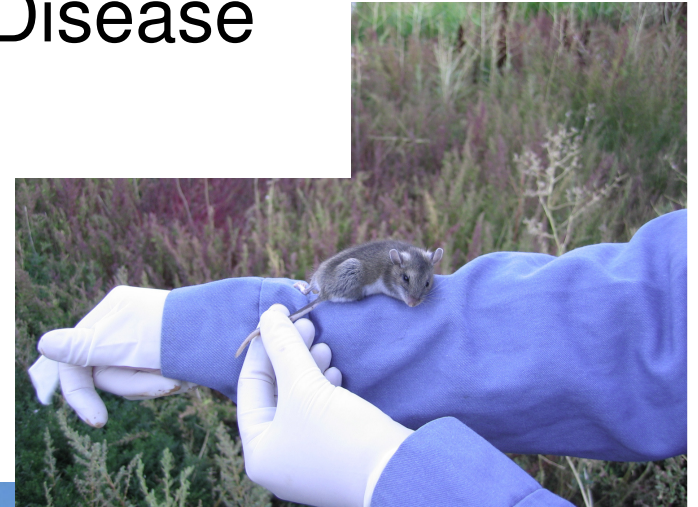
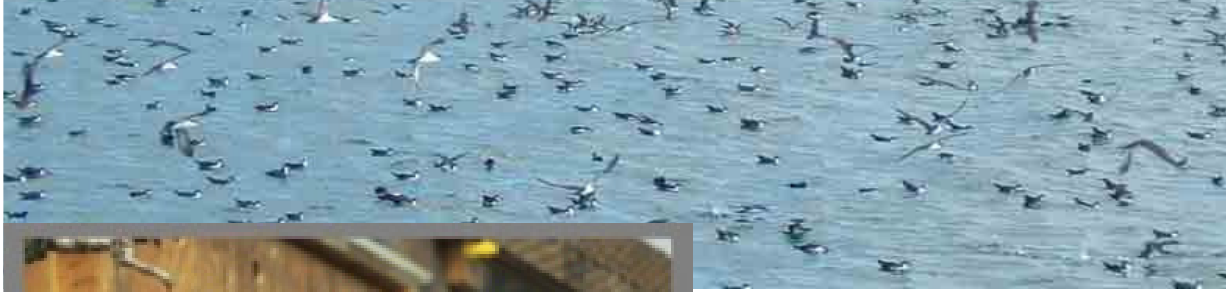
Water Quality

Wildlife, Ecology & Global Trade: Avian Influenza Pathways



Inequality & Poverty

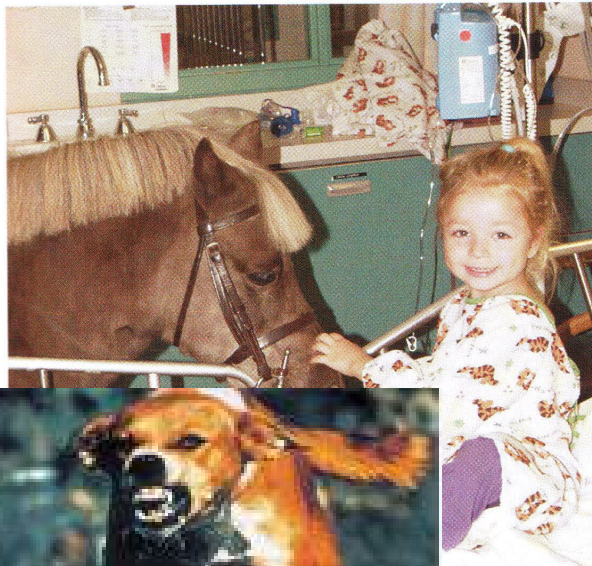
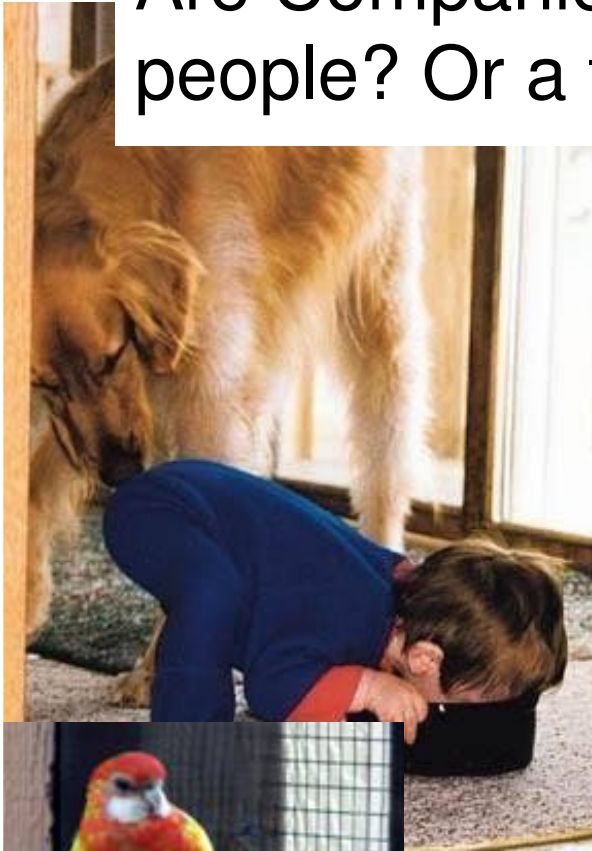
What is the value of wildlife? Disease threat?



Tourism? Ecosystem services? If they die off, it may threaten our own health. How do we live together?



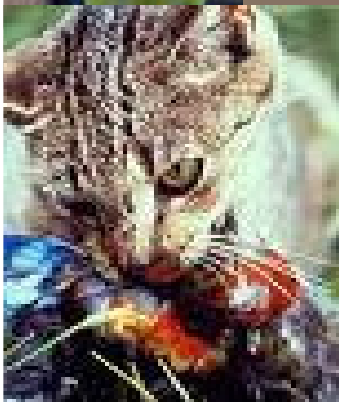
Are Companion Animals good for people? Or a threat?



By Kristin Davis
Veterinary Practice



FIGURE 2—Rabid dog exhibiting aggressive behavior.



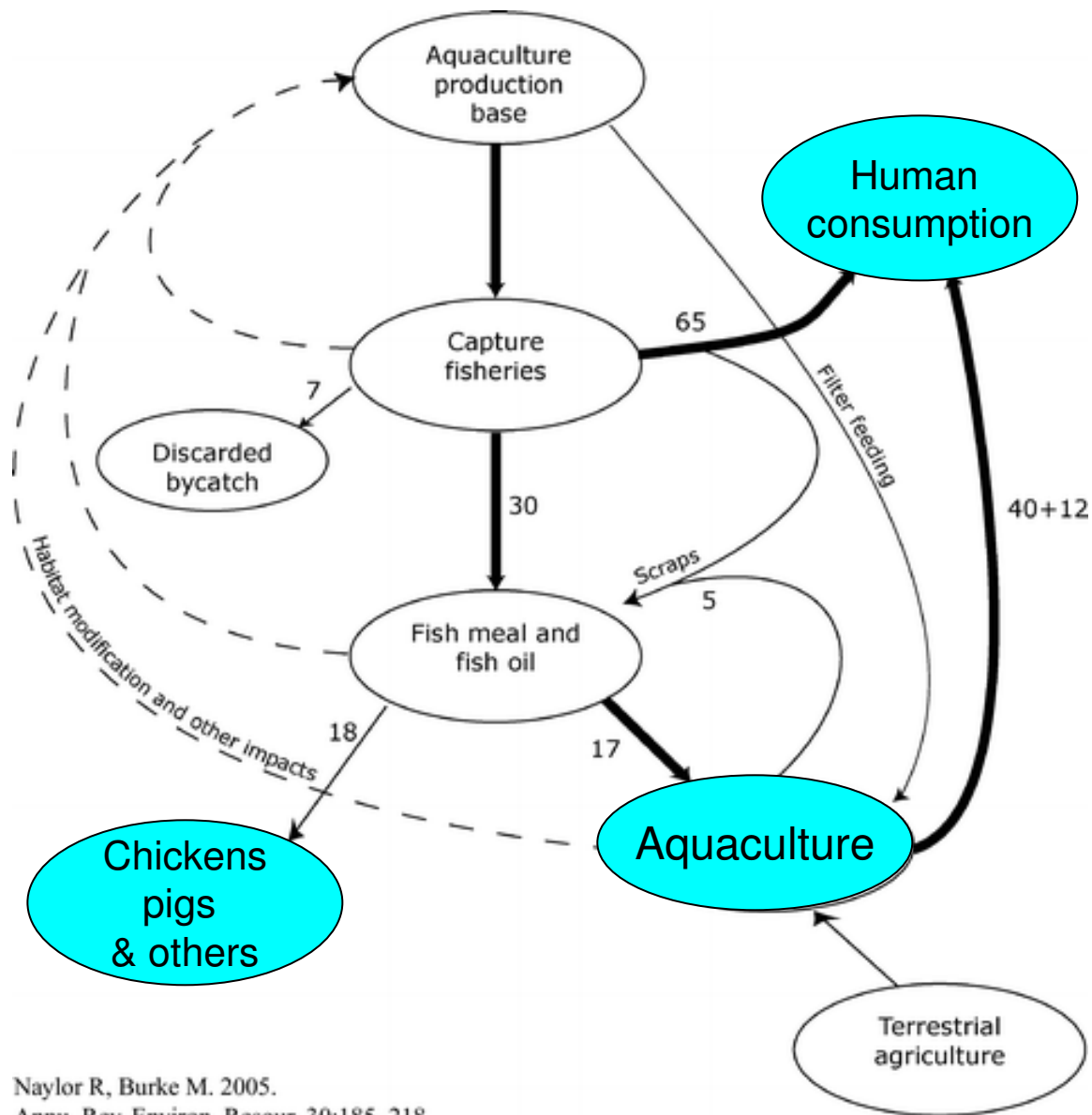
Agriculture - Human health? Animal Health? Ecosystem Health?

- Bi-directional links between agriculture and health (Hawkes et al WHO Bulletin - 2006)
 - Occupational health
 - Water associated &
 - vector-borne diseases
 - (Under)-nutrition
 - Chronic diseases
 - Foodborne Illnesses
 - HIV/AIDS
 - Livestock-related illnesses
- Animal health-related activities in much of the world are/ can be both a path out of poverty, and hence a path into health, as well as a path into devastation and poverty.





What is hidden?



Naylor R, Burke M. 2005.
 Annu. Rev. Environ. Resour. 30:185–218



What is misinterpreted?







Multiple Perspectives - Whose reality matters?



What is the value of a Chicken?

Barcelona – Birds on the Street
How do they look?



Birds in Cages – How do they crow?
- Yogyakarta





What is the value of a rat?





What is the value
of a cockroach?



Responses/ Solutions

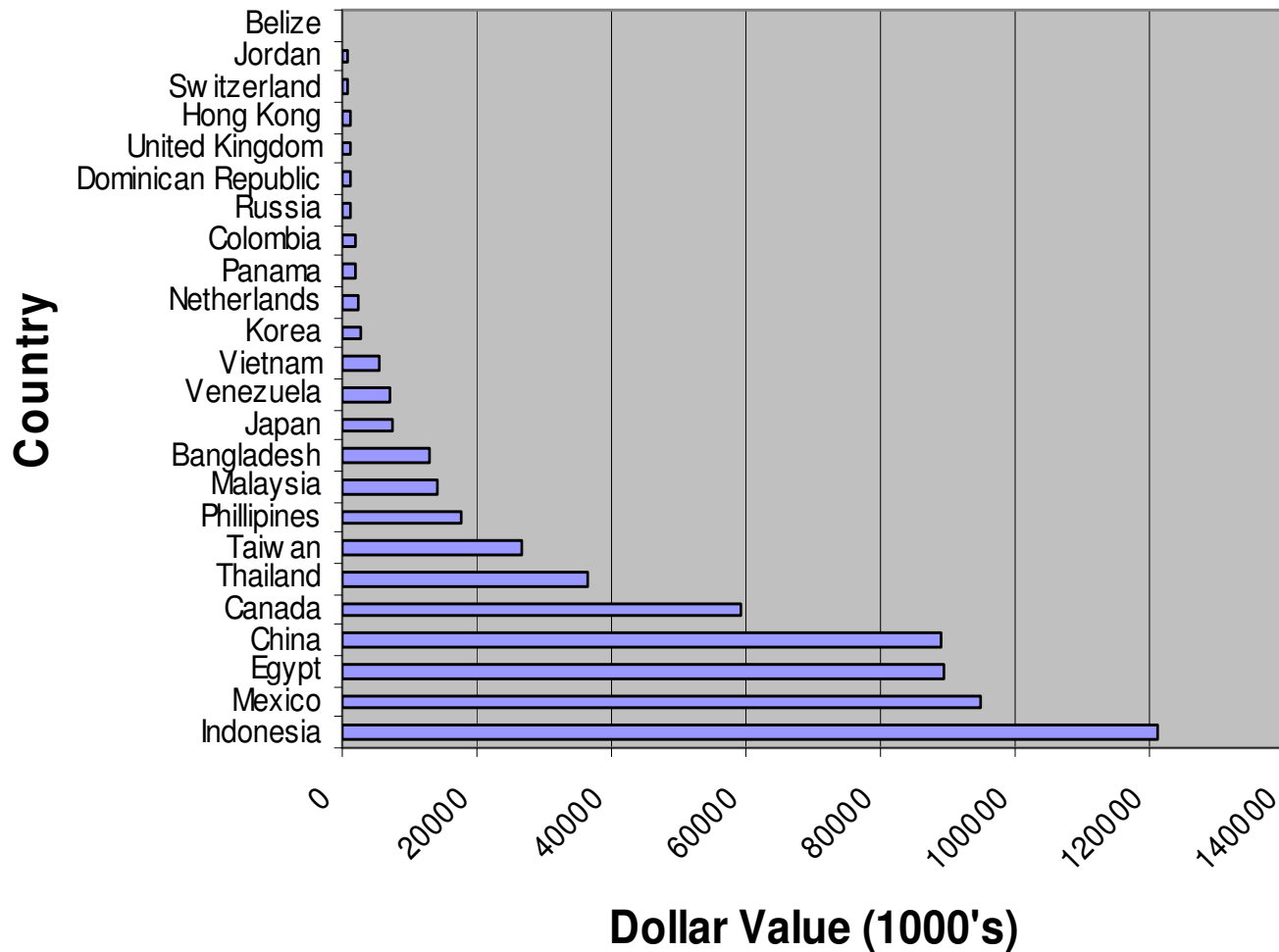
- If we live in a system driven by consumer demand - who are the consumers? Who are the providers? Where are the diseases emerging?
- So-called novel species (to us) are one important entry point
- But changes in relationships and systems are just as important (Culture, Justice,...)
- Remember the causes of emergence; remember Virchow.

The technical fixes (vaccines, drugs, housing)- important but

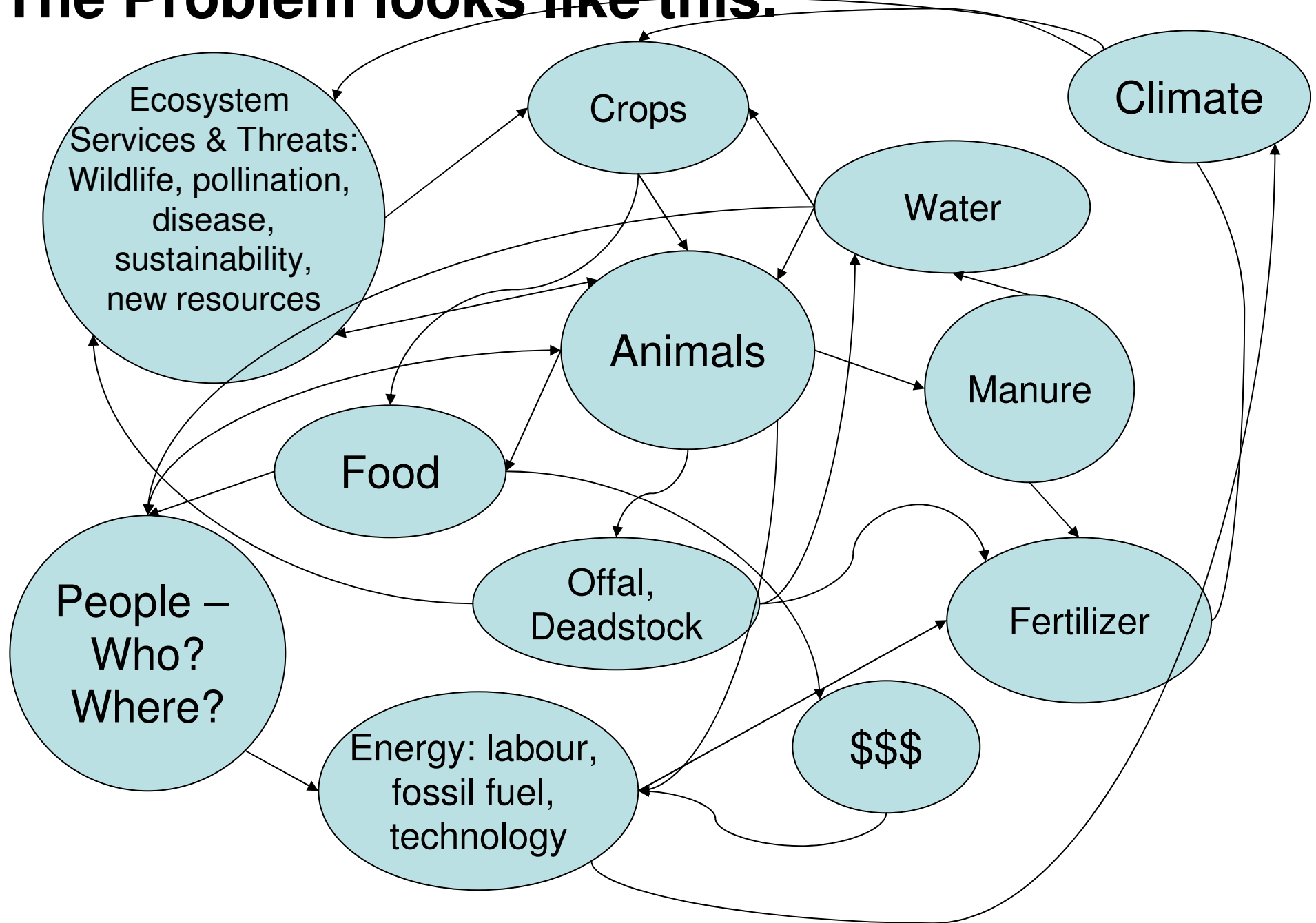


Change how we think: there are no silos; there is no local; there is no status quo – social-cultural change

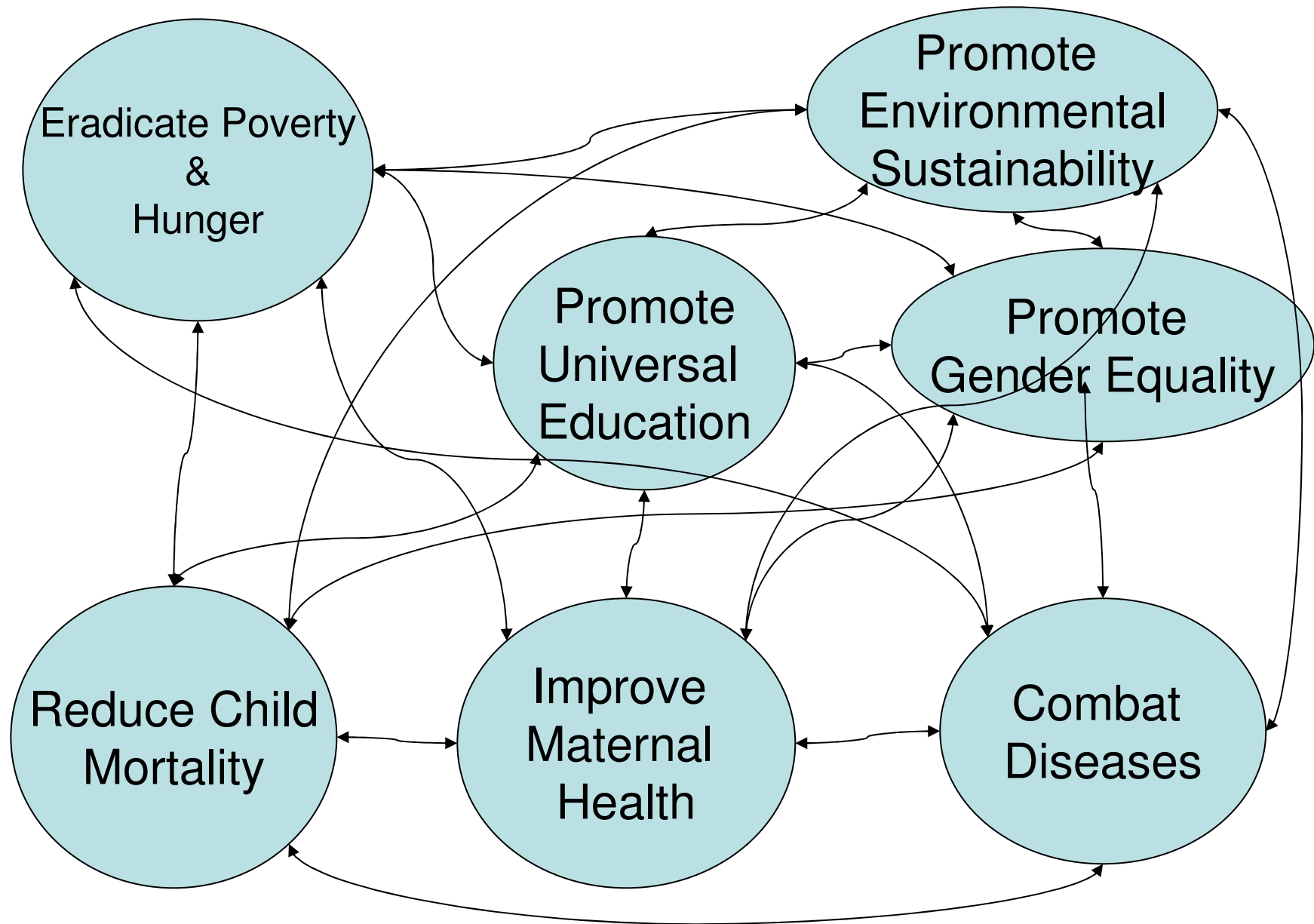
USA Meatmeal Tankage Exports 1999-2003



The Problem looks like this.



And The Solution? A global Partnership to:





Who are the Partners? All the scientific peers, of course, but mainly our “lay” peers” - networking, collaborating, educating as we are educated together





You'll miss more for not looking than for not knowing.

What you see isn't always what is there: look with your ears

Compare notes: No one can figure this out alone

WE have to be prepared to change if we are asking others to do so.

Ask why why why – a good scientist never gets past 5 years old

Declaration of Conflict:
If you buy any of these books
I will make about two dollars per book

